

ABSTRACT

A system that uses a ping pong protocol in order to remain as flexible as possible during traffic allocation includes multiple units, each of which has a unique address. A first unit transmits a first data packet including a first length indicator toward a second unit or a third unit. Each of the second unit and the third unit is operable to receive the packet and then, upon receipt of the packet, can transmit another packet. One of the units can be assigned a master unit role and is operable to restart transmission operations using priority slots. A priority slot allows a unit to transmit a packet regardless of whether it has received a packet according to the ping-pong scheme. A selective-repeat automatic retransmission query scheme provides data integrity in an error-prone communications environment. The first unit and the second unit are operable to transmit packets that include a number of segments. Upon receipt of a packet, the receiving unit transmits another packet including acknowledgment information that indicates which, if any of the segments of the received packet were successfully received by the second unit bit map (BMS) and cumulative acknowledge (CUM_ACK) fields are used to indicate which segments were incorrectly received. Segments that are not successfully received can be repeatedly transmitted with a decreasing repetition interval.